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a housing made of conductive material and having an inner surface opposed to said outer side face of said display panel for containing said display panel;

a control unit controlling said display panel;

an antenna transmitting radio signals to receive radio signals from outside and transferring signals based on said radio signals between said control unit wherein said antenna is located between said outer side face of said display panel and said inner surface of said housing and is electrically grounded to said housing;

another housing rotatably connected to said housing; and

a hinge unit made of conductive material and rotatably connecting said housing and said another housing wherein said antenna is grounded to said housing via said hinge unit.

#### REMARKS

This is in response to the Office Action dated October 7, 2002, claims 1 to 26 are pending in the case. The Examiner's reconsideration of the rejections in view of the amendments and remarks is respectfully requested.

Applicants appreciate the Examiner's indication that claims 6 to 9 are allowed and that claims 2, 11, 13, and 14 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The Examiner has rejected claims 1, 3 to 5, 10, 12, and 15 to 18 under 35 U.S.C. 103(a) as being unpatentable over Zibrik et al. (5,138,328). The Examiner stated essentially that Zibrik teaches or suggests all the claimed limitations of claims 1, 3 to 5, 10, 12, and 15 to 18.

Claim 1 claims, *inter alia*, “a rib formed on the outer portion of said housing so that it projects approximate vertically to said display surface of said display panel; and a frame filling a space between said housing and said display panel wherein said antenna is sandwiched between said rib and said frame.” Claim 10 claims, *inter alia*, “another housing rotatably connected to said housing; and a hinge unit made of conductive material and rotatably connecting said housing and said another housing wherein said antenna is grounded to said housing via said hinge unit.” Claim 15 claims, *inter alia*, “a ground portion connected to said first ground and said second ground wherein said ground portion is in electrically connected with said first ground via a ground line connected at a location corresponding to said predetermined location of said radiator portion and in electrically connected with said second ground via a support member supporting said display panel.”

Zibrik teaches a low-profile, integral diversity antenna arrangement especially adapted for use in, and to provide RF modem capability for, a laptop computer terminal device with a liquid crystal display (LCD) mounted on nonconductive mounting posts, the antennas being grounded by a connective element 38. Referring to claim 1, Zibrik does not teach or suggest “a rib formed on the outer portion of said housing so that it projects approximate vertically to said display surface of said display panel.”

Referring to claim 10, Zibrik does not teach or suggest “another housing rotatably connected to said housing; and a hinge unit made of conductive material and rotatably connecting said housing and said another housing wherein said antenna is grounded to said housing via said hinge unit.”

Referring to claim 15, Zibrik teaches that each antenna is mounted on nonconductive mounting posts and is grounded by a connective element 38. Claim 15 claims a ground portion "electrically connected with said second ground via a support member supporting said display panel." Zibrik does not teach or suggest a second ground connected to a support member, essentially as claimed in claim 15. Thus, Zibrik does not teach or suggest all the limitations of claim 15.

Claims 3 to 5 depend from claim 1. Claims 12 to 14 depend from claim 10. Claims 16 to 18 depend from claim 15. The dependent claims are believed to be allowable for at least the reasons given for the independent claims. The Examiner's reconsideration of the rejection is respectfully requested.

The Examiner has rejected claims 19 to 22 under 35 U.S.C. 103(a) as being unpatentable over Snowdon (5,677,698). The Examiner stated essentially that Snowdon teaches or suggests all the limitations of claims 19 to 22.

Claim 19 claims "a conductive RF shielding foil disposed on the back of an electronic display having a hole; and a feed portion extending partially across the hole forming a slot antenna."

Snowdon discloses "a slot antenna is attached to the surface of an equipment case made of a dielectric material, there being provided also a ground plane spaced a small distance apart from the case and behind the antenna." (See Abstract.) Snowdon does not disclose or suggest a slot antenna including "a feed portion extending partially across the hole forming a slot antenna" as claimed in claim 19. Therefore, Snowdon fails to teach or suggest all the limitations of claim

19. Claims 20 to 22 depend from claim 19. The dependent claims are believed to be allowable over the cited references for at least the reasons given for claim 19. Reconsideration of the rejection is respectfully requested.

The Examiner has rejected claims 23 to 26 under 35 U.S.C. 103(a) as being unpatentable over Snowdon in view of Zibrik and Rasinger et al. (5,365,246). The Examiner stated essentially that Snowdon, Zibrik, and Rasinger teach or suggest all the claimed limitations.

Claim 23 claims "a conductive RF shielding foil disposed on the back of an electronic display having a notch; and a feed portion extending partially across the notch forming an inverted-F antenna."

Snowdon discloses "a slot antenna is attached to the surface of an equipment case made of a dielectric material, there being provided also a ground plane spaced a small distance apart from the case and behind the antenna." (See Abstract.) Snowdon does not disclose or suggest a slot antenna including "a feed portion extending partially across the notch forming an inverted-F antenna" as claimed in claim 23.

Zibrik teaches a low-profile, integral diversity antenna arrangement especially adapted for use in, and to provide RF modem capability for, a laptop computer terminal device with a liquid crystal display (LCD) mounted on nonconductive mounting posts, the antennas being grounded by a connective element 38. However, Zibrik does not teach or suggest "a feed portion extending partially across the notch forming an inverted-F antenna" as claimed in claim 23.

Rasinger teaches an antenna consisting essentially of two sheet-metal angles which are arranged adjacently to one another. (See Abstract.) Rasinger does not teach or suggest "a feed

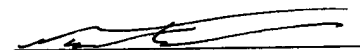
portion extending partially across the notch forming an inverted-F antenna” as claimed in claim 23.

Therefore, the combined teachings of Snowden, Zibrik, and Rasinger fail to teach or suggest “a feed portion extending partially across the notch forming an inverted-F antenna” as claimed in claim 23. (Emphasis added.) The Examiner’s reconsideration of the rejection is respectfully requested.

Claims 24 to 26 depend from claim 23. The dependent claims are believed to be allowable over the cited references for at least the reasons given for claim 19. Reconsideration of the rejection is respectfully requested.

Accordingly, claims 1, 3 to 10, and 12 to 26 are believed to be allowable for at least the reasons stated above. The Examiner’s reconsideration of the rejections is respectfully requested. For the forgoing reasons, the application is believed to be in condition for allowance. Early and favorable reconsideration is respectfully requested.

Respectfully submitted,



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### **MARKED-UP CLAIMS**

1. (Amended) A display device, comprising:

a display panel having a display surface for images and an outer side face adjacent to said display surface;

a housing containing said display panel and having an inner surface opposed to said outer side face of said display panel; [and]

an antenna located between said outer side face of said display panel and said inner surface of said housing;

wherein said antenna includes a radiator portion provided at a predetermined distance from a conductive material portion of said display panel and/or said housing and a ground portion connected to said portions made of conductive material[.];

a rib formed on the outer portion of said housing so that it projects approximate vertically to said display surface of said display panel; and

a frame filling a space between said housing and said display panel wherein said antenna is sandwiched between said rib and said frame.

10. (Amended) A computer terminal, comprising:

a display panel having a display surface for images and an outer side face adjacent to said display surface;

a housing made of conductive material and having an inner surface opposed to said outer side face of said display panel for containing said display panel;

a control unit controlling said display panel; [and]

an antenna transmitting radio signals to receive radio signals from outside and transferring signals based on said radio signals between said control unit wherein said antenna is located between said outer side face of said display panel and said inner surface of said housing and is electrically grounded to said housing[.];

another housing rotatably connected to said housing; and

a hinge unit made of conductive material and rotatably connecting said housing and said another housing wherein said antenna is grounded to said housing via said hinge unit.

15. (Amended) An antenna for a portable computer having a display, comprising:

a metal support embedded in a housing for supporting the display;

a radiating element extending from the metal support; [and]

a first conductor for carrying a signal from a first portion of the radiating element to the computer; and

a second conductor for connecting a second portion of the radiating element to the metal support for grounding the radiating element.